



NEW ENTERPRISE **Culture Strategies for Production and Economics** **of Yellow Perch Aquaculture**

Don McFeeters, Geoff Wallat, and Laura Tiu
The Ohio State University South Centers at Piketon

Yellow perch (*Perca flavescens*) offers considerable economic potential in Ohio and the Midwest as an aquaculture species. Aquaculture or fish farming, although relatively new to Ohio, is an agricultural practice first started in China more than two thousand years ago.

Annual harvests of yellow perch in the Great Lakes region peaked in the late 1960s at 36 million pounds worth an estimated \$36 to \$38 million. Since that time, harvest totals have steadily declined to around 4.3 million pounds in 1996. A recent survey of wholesale and retail buyers of perch products indicated many buyers could easily double their current purchases of perch if it were more available.

Despite this opportunity, expansion of yellow perch aquaculture has not occurred. The goal of this project was to develop strategies to overcome this lack of expansion. Providing reliable research-based information on yellow perch production methods is key to overcoming the barriers preventing the successful development of this venture.

The initial research focused on three areas — improving survival and yield of juvenile fish; increasing survival and growth performance of advanced (older) juveniles; and determining the effect of separating fish (grading) into similar size groups to increase production of food-sized fish (8 to 11 inches total length).

Results indicate that approximately three times more juveniles are produced by combining indoor spawning and egg incubation techniques with pond culture of yellow perch juveniles vs. the traditional method of all-pond incubation and culture. Adding refuge structures in ponds with juvenile yellow perch did not lead to a significant increase in growth performance or survival. However, grading yellow perch into uniform groups led to highly significant increases in growth performance and the percentage of fish reaching food size in the larger-sized groups, indicating increased efficiency and potential profitability.

OBJECTIVES

Initial research focused on:

- Improving survival and yield of juvenile yellow perch.
- Increasing growth performance of advanced juvenile yellow perch.
- Determining the effect of grading on production of food-sized yellow perch.

CHALLENGES

The challenge for this New Enterprise was to address identified production problems associated with yellow perch aquaculture and to develop research-based solutions for these problems. While interest in yellow perch culture remains very strong, difficulties exist in areas such as the production of yellow perch juveniles, determination of optimal stocking densities and feeding practices, and the production of large numbers of food-sized yellow perch.

ACHIEVEMENTS

The research demonstrated that certain aquaculture practices produced significant increases in growth performance, which led to an increase in the percentage of yellow perch reaching food size. These results indicate that increased production efficiency and potential profitability for private operations is obtainable.

More than 40 participants were trained in the first-ever Perch School held at Ohio State University's South Centers at Piketon in March 2003. Participants were given hands-on, intensive training in the techniques developed during this research project for the spawning and culture of yellow perch.

THE FUTURE

Data for estimating production costs were gathered throughout the experiment to develop cost production budgets. This will provide additional information to producers looking for alternatives to traditional crops in Ohio.

The preliminary results from this New Enterprise funding allowed researchers to secure additional grants totaling more than \$900,000. This funding will allow for continued efforts toward improving yellow perch aquaculture and conducting additional aquaculture market studies, product testing, and outreach efforts.

This research was funded through the OARDC Research Enhancement Competitive Grants Program, which receives funding from dollars appropriated by the state of Ohio.

Photo courtesy Jodi Miller

